

# MARINE BIOLOGY

## Bachelor of Science (BS)

This degree map is based on the 2023-24 Academic Catalog and is subject to change. Students should meet with their academic advisor each semester and use Degree Works to monitor their individual progress toward degree completion. The time it takes to earn a degree will vary based on several factors including summer/winter enrollment, dual enrollment and number of courses successfully completed each semester. We recommend taking a minimum of 15 credits each fall and spring semester.

### Sample 4-Year Plan

First Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 110 Principles of Biology 1	4	BIOL 111 Principles of Biology 2	4
CHEM 121 General Chemistry 1	4	CHEM 122 General Chemistry 2	4
WRIT 103	3	General Education Course	3
FYS 100	3	General Education Course	3
Semester Total	14	Semester Total	14

Second Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 211 Cell Biology	4	BIOL 209 Genetics	3
CHEM 231 Condensed Organic Chemistry	4	BIOL 201 Introduction to Biological Research	3
STAT 141 Intro to Statistics	3	Biology Elective	3
General Education	3	MATH 150 Essentials of Calculus	3
General Education	3	General Education Course	3
Semester Total	17	Semester Total	15
		Summer courses - CBFS courses, 9 credits total***	

\*\*\*At least one summer of Biology classes offered at Chincoteague Bay Field Station (CBFS) or other marine station (Minimum total of 9 SH for the degree) \*\*\*

Third Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 301 Ecology	4	Biology Elective	3
PHYS 208 Intro to Physics 1 or PHYS 211 General Physics 1	4	Biology Elective	3
Biology Elective	3	Biology Elective	3
BIOL 321 Marine Biology or EGGS 259 Oceanography	3	General Education Course	3
		General Education Course	3
Semester Total	14	Semester Total	15

Fourth Year			
Fall Courses	Credits	Spring Courses	Credits
Biology Elective	3	Biology Elective	3
Biology Elective	3	Biology Elective	3
General Education Course	3	General Education Course	3
General Education Course	3	General Education Course	3
Free Elective	3	Free Elective	3
Free Elective	1		
Semester Total	16	Semester Total	15

**Winter/Summer College - Optional**  
While not required, Winter and Summer sessions are offered each year and may help you stay on track or get ahead. You may take up to seven (7) credits during Winter College and up to 14 credits during Summer College.

## Curriculum Checklist

### Fall 2023 Commonwealth Courses (120 credits)

#### Biology Core Requirements (25 credits)

- \_\_\_ BIOL 110 Principles of Biology 1 (4)
- \_\_\_ BIOL 111 Principles of Biology 2 (4)
- \_\_\_ BIOL 201 Intro to Bio Research (3)
- \_\_\_ BIOL 209 Genetics (3)
- \_\_\_ BIOL 211 Cell Biology (4)
- \_\_\_ BIOL 301 Ecology (4)
- \_\_\_ BIOL 361 Marine Biology OR EGGS 259 Oceanography (3)

#### Related Core Requirements (22 credits)

- \_\_\_ CHEM 121 General Chemistry 1 (4)
- \_\_\_ CHEM 122 General Chemistry 2 (4)
- \_\_\_ CHEM 231\* Condensed Organic Chem (4)
- \_\_\_ PHYS 208 Intro to Physics 1 (4)
- \_\_\_ STAT 141 Intro to Statistics (3)
- \_\_\_ MATH 150\*\* Essentials of Calculus (3)

\*CHEM 281 Organic Chemistry 1 can be substituted

\*\*MATH 160 Calculus 1 can be substituted

### Fall 2023 Commonwealth Elective Courses (28 credits)

#### A. Block A Skill Development (19 Credits)

##### Required (3 Credits)

- \_\_\_ BIOL 438 Environ. Policy & Reg (3)
- \_\_\_ BIOL 439 Hum. Dim. Fisheries Mgt (3)
- \_\_\_ BIOL 443 Molecular Biology (3)
- \_\_\_ BIOL 444 Molecular Biology Lab (1)
- \_\_\_ BIOL 446 Immunology (3)
- \_\_\_ BIOL 486 Analy & Comm of Bio Data (3)
- \_\_\_ BIOL 489 Special Topics in Biology (3)

#### B. Block B Practical Application (10-18 Credits)

##### Required (3 Credits)

- \_\_\_ BIOL 112 Aquaculture (3)
- \_\_\_ BIOL 113 Applied Aquaculture (3)
- \_\_\_ BIOL 493 Undergrad Res in Bio (1-6cr)
- \_\_\_ BIOL 498 Internship in Bio (3-6cr)

#### C. Block C Organismal Courses (55 Credits)

##### Required (6 Credits)

- \_\_\_ BIOL 206 Botany (3)
- \_\_\_ BIOL 207 Zoology (3)
- \_\_\_ BIOL 213 Intro to Parasitology (3)
- \_\_\_ BIOL 314 Comp. Bio of Invertebrates (3)
- \_\_\_ BIOL 315 Comp. Vert. Anatomy (3)
- \_\_\_ BIOL 340 Microbiology (4)
- \_\_\_ BIOL 350 Plant Pathology (3)
- \_\_\_ BIOL 400 Dendrology (3)
- \_\_\_ BIOL 401 Entomology (3)
- \_\_\_ BIOL 431 Mycology (3)
- \_\_\_ BIOL 432 Ornithology (3)
- \_\_\_ BIOL 433 Ichthyology (3)
- \_\_\_ BIOL 434 Herpetology (3)
- \_\_\_ BIOL 453 Freshwater Entomology (3)
- \_\_\_ BIOL 454 Algae of Freshwater Eco (3)
- \_\_\_ BIOL 460 Plants, An. Nat. His. of PA (3)
- \_\_\_ BIOL 473 Environmental Physiology (3)
- \_\_\_ BIOL 477 Plant Physiology (3)

#### D. Block D Ecology/Evolution (15 Credits)

##### Required (3 Credits)

- \_\_\_ BIOL 430 Evolution (3)
- \_\_\_ BIOL 450 Developmental Biology (3)
- \_\_\_ BIOL 452 Freshwater Ecology (3)
- \_\_\_ BIOL 455 Community Ecology (3)
- \_\_\_ BIOL 461 Animal Behavior (3)

#### E. Block E Conservation/Biodiversity (18 Credits)

##### Required (3 Credits)

- \_\_\_ BIOL 263 Field Botany (3)
- \_\_\_ BIOL 419 Ecosystems (3)
- \_\_\_ BIOL 420 Global Change Biology (3)
- \_\_\_ BIOL 435 Conservation Genetics (3)
- \_\_\_ BIOL 451 Conservation Biology (3)
- \_\_\_ BIOL 456 Environmental Toxicology (3)

#### F. Block F Chincoteague Bay Field Station (9 Credits)

##### Required (9 Credits)

- \_\_\_ (3)
- \_\_\_ (3)
- \_\_\_ (3)

#### G. Block G Free Electives

##### Required (10 Credits)

- \_\_\_ BIOL
- \_\_\_ BIOL
- \_\_\_ BIOL
- \_\_\_ BIOL

##### OR choose any of the courses below:

- \_\_\_ BIOL 208 Human Genetics (3)
- \_\_\_ BIOL 210 Genetics Laboratory (1)
- \_\_\_ BIOL 252 Watershed Ecology Techniques (3)
- \_\_\_ BIOL 337 Basic Virology (3)
- \_\_\_ BIOL 361 Marine Biology (3)
- \_\_\_ BIOL 442 Advanced Virology (3)
- \_\_\_ BIOL 448 Advanced Parasitology (3)
- \_\_\_ EGGS 259 Oceanography (3)

## General Education Requirements

### (45 credits)

*Note: Some requirements may be fulfilled by coursework in your major program including directed Gen Ed courses noted below*

- Foundations (15 credits)
  - MATH 150; MATH 160; STAT 141 (3)
- Interconnections (9 credits)
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- Citizenship & Responsibility (6 credits from at least two goals)
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- Natural World & Technologies (9 credits)
  - BIOL110 Principles of Biology I (4)
  - CHEM 121 General Chemistry 1 (4)
  - PHYS208 Intro to Physics I (4)
- Creativity & Expression (6 credits)
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## Degree Requirements

All students must obtain a minimum of 120 credits, complete all General Education requirements, and all requirements for the selected major. Meet with your advisor and consult Degree Works to monitor your progress and for all graduation requirements.

*A minimum GPA of 2.0 in the major and overall are required.*

## Campus Locations

**Bloomsburg**     Online;  In-person;  Blended

**Lock Haven**     Online;  In-person;  Blended

**Mansfield**     Online;  In-person;  Blended

**Clearfield**     Online;  In-person;  Blended

Revised April, 2023